

Application No. 09/160,503
Amendment dated December 26, 2005
Reply to Office Action dated August 24, 2005

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claim 1 (Currently amended) An apparatus for generating an image on a display, wherein said image includes one or more special windows, comprising:

a window manager to embed special window information in a video signal comprised of a first color signal, a second color signal, and a third color signal with said first color signal including said special window information, wherein said video signal characterizes said image to be generated on said display and said first and second color signals are used to display said special window information on said display; and

a window decoder to extract said special window information from said video signal and responsively generate a display control signal, wherein said display control signal enables special processing of portions of said video signal associated with said one or more special windows, and wherein said special processing results in said one or more special windows being produced on said display with one or more display attributes that differ from non-processed portions of said video signal.

Claim 2 (Previously presented): The apparatus of claim 1, wherein said window manager is included in an operating system.

Claim 3 (Original): The apparatus of claim 1, wherein said window decoder is implemented as an application-specific integrated circuit.

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Claim 4 (Previously presented): The apparatus of claim 1, further comprising:

a target area in said special windows to be specially processed in response to said display control signal, wherein said special processing results in said target area being produced on said display with one or more display attributes that differ from non-target areas; and

a video interface to transmit data including said special window information to said display.

Claim 5 (Currently amended): The apparatus of claim 4, ~~further comprising~~
wherein:

~~pixels contained in said display;~~

a said third ~~first~~ color signal serves ~~serving~~ as a video clock signal for said special window information [[:]]

~~a second color signal including said special window information; and~~

~~a third color signal.~~

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Claim 6 (Currently amended): The apparatus of claim 5, further comprising:

key signals including a pattern of bits of said special window information to encode a target area position, and corresponding to a pattern of said pixels depicted in said display.

Claim 7 (Original): The apparatus of claim 5, further comprising:

pixel pairs in said display, each member pixel of said pixel pairs being proximately located, said pixel pairs being colored according to said first color signal, said second color signal, and said third color signal in an additively complementary manner to visually approximate a single pixel of a mixed color.

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Claim 8 (Original): The apparatus of claim 6, wherein components of said key signals include:

a start sequence indicating a beginning of said key signals;

a code sequence distinguishing said key signals from said data;

a horizontal offset sequence indicating a boundary of said target area relative to a horizontal position of said key signals;

a vertical offset sequence indicating a second boundary of said target area relative to a vertical position of said key signals;

a CRC checksum verifying said horizontal offset sequence and said vertical offset sequence; and

a stop sequence indicating an end of said key signals.

Claim 9 (Original): The apparatus of claim 8, further comprising:

nondifferential key signal data indicating said start sequence and said stop sequence; and

differential key signal data indicating remaining components of said key signals.

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Claim 10 (Original): The apparatus of claim 8, further comprising:

a number sequence indicating a number of special windows.

Claim 11 (Original): The apparatus of claim 8, further comprising:

a shape sequence indicating a shape of said target area when said target area is not rectangular.

Claim 12 (Original): The apparatus of claim 8, further comprising:

a selection sequence indicating a selection from among a plurality of available special processes.

Claim 13 (Withdrawn): The apparatus of claim 6, wherein scroll bars in said special windows function as controls for special processing.

Claim 14 (Withdrawn): The apparatus of claim 6, wherein said key signals include hidden watermarks.

Claim 15 (Withdrawn): The apparatus of claim 6, wherein said key signals include visibly apparent symbols.

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Claim 16 (Withdrawn): The apparatus of claim 6, further comprising:

key signal verification circuits identifying said special windows and
responsively enabling an attribute;

a vertical counter monitoring a number of vertically scanned lines of said
pixels occurring after a vertical synchronization signal;

a horizontal counter monitoring a number of horizontally scanned pixels after
a horizontal synchronization signal;

registers storing said target area position in terms of said vertically scanned
lines and said horizontally scanned pixels when said attribute is enabled;

a comparator monitoring a position of said pixels in terms of said vertically
scanned lines and said horizontally scanned pixels, comparing said position of said
pixels to said target area position, and responsively generating said display control
signal to enable special processing.

Claim 17 (Withdrawn): The apparatus of claim 16, further comprising:

an internal logic clock signal denoting an intended duration for said special
processing of said pixels in said target area; and

a frequency control unit synchronizing said internal logic clock signal to said
video clock signal to regulate a horizontal width of said pixels in said target area
with a duration of said display control signal, thereby calibrating said special
processing with a scan of said display.

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Claim 18 (Withdrawn): The apparatus of claim 17, wherein said key signal verification circuits enable said attribute when a duration of said key signals in terms of internal logic clock signal periods is consistent with a key signal format.

Claim 19 (Withdrawn): The apparatus of claim 16, wherein said attribute is disabled by an absence of said key signals.

Claim 20 (Withdrawn): The apparatus of claim 16, wherein said key signal verification circuits enable said attribute when said key signals exist during one scan of said display and persist for a number of scans of said display.

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Claim 21 (Currently amended): A method for generating an image on a display, wherein said image includes one or more special windows, comprising the steps of:

embedding special window information in a video signal comprised of a first color signal, a second color signal, and a third color signal with said first color signal including said special window information, wherein said video signal characterizes said image to be generated on said display and said first and second color signals are used to display said special window information on said display;

extracting said special window information from said video signal; and

generating a display control signal in response to said window information to enable different processing of portions of said video signal associated with said one or more special windows, wherein said different processing results in said one or more special windows being produced on said display with one or more display attributes differing from non-processed portions of said video signal.

Claim 22 (Previously presented): The method of claim 21, wherein said step of embedding is performed by a window manager that is included in an operating system.

Claim 23 (Currently amended): The method of claim 21, wherein said step of extracting is performed by a window decoder is implemented as an application-specific integrated circuit.

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Claim 24 (Previously presented): The method of claim 21, further comprising the steps of:

 specially processing a target area in said special windows in response to said display control signal, wherein said special processing results in said target area being produced on said display with one or more display attributes that differ from non-target areas; and

 transmitting data including said special window information to said display using a video interface.

Claim 25 (Currently amended): The method of claim 24, further comprising the steps of:

 depicting pixels in said display; and

~~transmitting a~~ using the third first color signal ~~serving~~ as a video clock signal for said special window information [[:]]

~~transmitting a second color signal including said special window information;~~
and

~~transmitting a third color signal.~~

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Claim 26 (Original): The method of claim 25, further comprising the steps of:

transmitting key signals including a pattern of bits of said special window information to encode a target are position, and

corresponding to a pattern of said pixels depicted in said display.

Claim 27 (Original): The method of claim 25, further comprising the step of:

depicting pixel pairs in said display, each member pixel of said pixel pairs being proximately located, said pixel pairs being colored according to said first color signal, said second color signal, and said third color signal in an additively complementary manner to visually approximate a single pixel of a mixed color.

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Claim 28 (Original): The method of claim 26, wherein said step of transmitting said key signals further comprises the step of concurrently transmitting within said key signals:

a start sequence indicating a beginning of said key signals;

a code sequence distinguishing said key signals from said data;

a horizontal offset sequence indicating a boundary of said target area relative to a horizontal position of said key signals;

a vertical offset sequence indicating a second boundary of said target area relative to a vertical position of said key signals;

a CRC checksum verifying said horizontal offset sequence and said vertical offset sequence; and

a stop sequence indicating an end of said key signals.

Claim 29 (Original): The method of claim 28, further comprising the steps of:

transmitting nondifferential key signal data indicating said start sequence and said stop sequence; and

transmitting differential key signal data indicating remaining components of said key signals.

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Claim 30 (Original): The method of claim 28, further comprising the step of:

transmitting a number sequence indicating a number of special windows.

Claim 31 (Original): The method of claim 28, further comprising the step of:

transmitting a shape sequence indicating s shape of said target area when said target area is not rectangular.

Claim 32 (Original): The method of claim 28, further comprising the step of:

transmitting a selection sequence indicating a selection from among a plurality of available special processes.

Claim 33 (Withdrawn): The method of claim 26, wherein scroll bars in said special windows function as controls for special processing.

Claim 34 (Withdrawn): The method of claim 26, wherein said key signals include hidden watermarks.

Claim 35 (Withdrawn): The method of claim 26, wherein said key signals include visibly apparent symbols.

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Claim 36 (Withdrawn): The method of claim 26, further comprising the steps of:

identifying said special windows and responsively enabling an attribute using key signal verification circuits;

monitoring a number of vertically scanned lines of said pixels occurring after a vertical synchronization signal using a vertical counter;

monitoring a number of horizontally scanned pixels after a horizontal synchronization signal using a horizontal counter;

using registers to store said target area position in terms of said vertically scanned lines and said horizontally scanned pixels when said attribute is enabled;

using a comparator to monitor a position of said pixels in terms of said vertically scanned lines and said horizontally scanned pixels, to compare said position of said pixels to said target area position, and to responsively generate said display control signal to enable special processing.

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Claim 37 (Withdrawn): The method of claim 26, further comprising the steps of:

denoting an intended duration for said special processing of said pixels in said target area using an internal logic clock signal; and

using a frequency control unit to synchronize said internal logic clock signal to said video clock signal and regulate a horizontal width of said pixels in said target area with a duration of said display control signal, thereby calibrating said special processing with a scan of said display.

Claim 38 (Withdrawn): The method of claim 36, wherein said key signal verification circuits enable said attribute when a duration of said key signals in terms of internal logic clock signal periods is consistent with a key signal format.

Claim 39 (Withdrawn): The method of claim 36, wherein said attribute is disabled by an absence of said key signals.

Claim 40 (Withdrawn): The method of claim 36, wherein said key signal verification circuits enable said attribute when said key signals exist during one scan of said display and persist for a number of scans of said display.

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Claim 41 (Original): The method of claim 26, wherein said step of transmitting said key signals further comprises the steps of:

transmitting a start sequence indicating a beginning of said key signals;

transmitting a code sequence distinguishing said key signals from said data;

transmitting a horizontal offset sequence indicating a boundary of said target area relative to a horizontal position of said key signals;

transmitting a vertical offset sequence indicating a second boundary of said target area relative to a vertical position of said key signals;

transmitting a CRC checksum verifying said horizontal offset sequence and said vertical offset sequence; and

transmitting a stop sequence indicating an end of said key signals.

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Claim 42 (Previously presented): A system for generating an image on a display, wherein said image includes one or more special windows, comprising:

means for embedding special window information in a video signal comprised of a first color signal, a second color signal, and a third color signal with said first color signal including said special window information, wherein said video signal characterizes said image to be generated on said display and said first and second color signals are used to display said special window information on said display;

means for extracting said special window information from said video signal;
and

means for generating a display control signal in response to said window information to enable different processing of portions of said video signal associated with said one or more special windows, wherein said different processing results in said one or more special windows being produced on said display with one or more display attributes differing from non-processed portions of said video signal.

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Claim 43 (Currently amended): A computer-readable medium comprising program instructions for generating an image comprised of one or more special windows on a display by performing the steps of:

embedding a special window information in a video signal comprised of a first color signal, a second color signal, and a third color signal with said first color signal including said special window information using a window manager, wherein said video signal characterizes said image to be generated on said display and said first and second color signals are used to display said special window information on said display;

extracting said special window information from said video signal ~~using a window decoder~~; and

generating a display control signal in response to said window information to enable special processing of portions of said video signal associated with said one or more special windows, wherein said special processing results in said one or more special windows being produced on said display with one or more display attributes that differ from non-processed portions of said video signal.

Claim 44 (Previously presented): The apparatus of claim 1, wherein the special window information is embedded in the video signal so as to be visually indistinctive to a viewer.

Claim 45 (Previously presented): The method of claim 21, wherein the special window information is embedded in the video signal so as to be visually indistinctive to a viewer.

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Claim 46 (Previously presented): The system of claim 42, wherein the special window information is embedded in the video signal so as to be visually indistinctive to a viewer.

Claim 47 (Previously presented): The computer-readable medium of claim 43, wherein the special window information is embedded in the video signal so as to be visually indistinctive to a viewer.

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Claim 48 (Previously presented): A method for displaying an image on a display, wherein said image includes one or more special windows, comprising the steps of:

receiving a video signal that represents said image to be generated on said display, wherein said video signal is comprised of a first color signal, a second color signal, and a third color signal with said first color signal including includes at least one key signal embedded therein;

extracting said at least one key signal from said video signal;

selectively generating a display control signal in response to said at least one key signal, wherein said display control signal indicates a target area within said one or more special windows is to be specially processed in order to display said target area with one or more display attributes that differ from non-target areas; and

generating an output signal based on said video signal and the presence or absence of said display control signal, wherein said output signal produces said image including said one or more special windows on said display and said first and second color signals are used to display said at least one key signal to be displayed on said display.

Claim 49 (Previously presented): The method of claim 48, further comprising the step of disabling special processing when a special window is covered by another window.

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Claim 50 (Previously presented): An apparatus for displaying an image on a display, wherein said image includes one or more special windows, comprising:

means for receiving a video signal that represents said image to be generated on said display, wherein said video signal is comprised of a first color signal, a second color signal, and a third color signal with said first color signal including includes at least one key signal embedded therein;

means for extracting said at least one key signal from said video signal;

means for selectively generating a display control signal in response to said at least one key signal, wherein said display control signal indicates a target area within said one or more special windows is to be specially processed in order to display said target area with one or more display attributes that differ from non-target areas; and

means for generating an output signal based on said video signal and the presence or absence of said display control signal, wherein said output signal produces said image including said one or more special windows on said display and said first and second color signals are used to display said at least one key signal to be displayed on said display.

Claim 51 (Previously presented): The apparatus of claim 50, further comprising means for disabling special processing when a special window is covered by another window.